

Amendment to the Claims

1 – 27 (Canceled).

28 (Currently Amended). An optical network, comprising:

a plurality of connected devices, each of said plurality of devices operable to perform at least one of adding wavelengths within the network, dropping wavelengths within the network, regenerating wavelengths within the network, and providing for the passage of wavelengths therethrough;

a first of said plurality of connected devices operable to insert a wavelength within the network and send it to a second of said plurality of connected devices, and said first of said plurality of connected devices is further operable to send information related to the inserted wavelength to the second of said plurality of connected devices;

said information related to the inserted wavelength including data identifying the inserted wavelength and the identification of the first of said plurality of connected devices; and

said second of said plurality of connected devices operable to insert a wavelength within the network, and further operable to make a determination if the inserted wavelength by the second of said plurality of connected devices is equal to the wavelength inserted into the network by said first of said plurality of connected devices, wherein said second of said plurality of connected devices determines the wavelength inserted into the network by said first of said plurality of connected devices is a passthrough wavelength for the second of said plurality of devices when the inserted wavelengths are not equal.

29 (Original). The optical network as recited in claim 28, wherein said second of said plurality of connected devices further operable to make a determination if a connection with said first of said plurality of connected devices is a cross-connection.

30 (Original). The optical network as recited in claim 29, wherein said second of said plurality of connected devices further operable to provide for the passage of the wavelength received from said first of said plurality of connected devices to a third of said plurality of connected devices.

31 (Original). The optical network as recited in claim 30, wherein said second of said plurality of connected devices is further operable to provide for the passage of said information related to the inserted wavelength of the first of said plurality of connected devices to said third of said plurality of connected devices.

32 (New). An optical network element in an optical network, comprising:

- a plurality of transponders for generating wavelengths to be transmitted in a first direction by the network element to an adjacent network element over the optical network;

- a dedicated overhead wavelength channel for receiving a wavelength topology map from the adjacent network element in the optical network, wherein the wavelength topology map includes a first map portion that specifies the wavelengths being transmitted by the adjacent network element in a second direction to the network element;

- wherein said network element is operable to determine passthrough wavelengths from the wavelength topology map.

33 (New). The optical network element of claim 32, wherein said network element is operable to determine passthrough wavelengths from the wavelength topology map and from the wavelengths transmitted in a first direction by the network element.